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Communications.

COOLING THE BLOOD IN TYPHOID FEVER.

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The use of cold water as an antipyretic dates back to earliest historic times, but owing to the superstitions of the ancients in regard to the nature of disease, and to their dread of encountering the shock of cold applications, physicians found other means to lessen the dangerous temperature in fevers; and so, until quite recently, cold water has held comparatively little place among the substances used to reduce excessive vital heat. James Currie was the first in modern times to use the cooling treatment in fevers. He states that, of two hundred and twenty-nine patients suffering from typhus fever, treated with water during a severe epidemic at Liverpool, England, in the latter part of the last century, he only lost four, a mortality of not two per cent. This is a notable testimony in favor of the cooling water treatment when it is taken into account that public, or even private hygiene, was then scarcely thought of. Brand, of Stettin, says he did not lose a single patient out of a hundred and seventy treated with water during a pernicious epidemic. Many other physicians in Europe, distinguished for their learning and high standing, give the strongest testimony in favor of the effects of the cold bath, and cold wet bandages and compressers, in the treatment of typhoid fever. But Professor Sée, of Paris, condemns the use of the cold bath in the treatment of typhoid fever, and says it is not only useless, but absolutely dangerous, in the treatment of this affection, and puts his own experience and that of many others against that of those who testify in its favor. This disagreement among the medical savans of Europe, in a matter of such vital importance to mankind as the treatment of fever, calls for the exercise of our Yankee ingenuity to reconcile their conflicting statements, for there should be no doubt that both parties are truthful in what they assert. There can be no question in the mind of the student of pathology or morbid action in the living organism, that excessive vital heat is inseparably connected with all the morbid phenomena attending exalted vital action. But in order to free our minds from the entanglements occasioned by erudite studies in pathological phenomena, let us for a moment consider certain well-established physiological facts, and see what relation they bear to the subject under discussion. In the first place, it is true that the vital force or life principle is the cause of all motion in the human organism, from the first cell formation until the last throb of the heart. That heat of about 98° is the prime and absolutely essential condition of life in the human body. That health is undisturbed vital action, or, in modern high phrase, vitality under favorable environments. That disease is disturbed vital action, or life under unfavorable environments.

That the causes of health are the presence and influence of those substances and conditions which are congenial. That the causes of disease, or disturbed vital action, are those substances and conditions that are inimi-

cal or unfavorable to the normal manifestations of vitality in the organism. That the presence or influence of hygienic substances and conditions excites the heart to beat and the lungs to respire with normal force and frequency; and that the vital heat resulting from that normal vital action is 98° and normal. That the presence or influence of any substance or condition that is inimical to life, stimulates the heart to beat and the lungs to respire with increased force and frequency; and that the exalted action is for the purpose of expelling the inimical substance, together with the refuse of the system through the depurating organs. That exalted vital action, which hastens the motion of the blood through the circulatory and respiratory systems, by augmented friction and increased oxygenation of the blood, raises the vital heat above that degree which is congenial to health, provided it is not removed as fast as it is evolved, by cold air or cool water.

That when the excess of heat above 98° is removed as fast as it rises, no more injury results to the organism, from that exaltation of vital action which is stimulated by yellow fever or scarlatina poison, than from that caused by the mental excitement which produces excessive beating of the heart and respiration of the lungs while skating rapidly in the cold air of winter, or while swimming in cool water with competitors for a prize.

That exalted vital action causes excessive heat, and the two together constitute fever.

That exalted vital action, even if the resultant excess of heat be removed as fast as it rises, will exhaust the available stock of vitality, and death of the organism be the result, if a man use it all up in his muscles, or otherwise, through mental control, or if it be exhausted in resistance to something deadly inimical, under the self-preserving instinct of organic life.

That every abnormal change of fluid or solid, in the composition of the human organism, that occurs under vital control, as in all fevers, is under the influence of excessive heat as a fermenting condition, and without that condition of excessive heat there is no abnormal change in blood or tissue, whether the organism is working rapidly to supply vital force to the muscles, or to expel inimical substances.

That none of the causes of exalted vital action and excessive heat, or fever, which are taken into the blood through the lungs, the seed poisons in all infectious and malarial fevers, have virulence enough in them to produce death of the organism, by exhausting the vital force in its resistance to them, if the excessive heat that is evolved by that resistance be removed as fast as it rises.

These physiological facts, and the axiomatic conclusions drawn from them, should enable us to distinguish clearly between the truth and error which have become so confounded through the contradictory statements of those distinguished men.

Let us first see wherein they agree. They all agree that the cold bath reduces the high temperature of fevers, that its effect is only temporary, and that the reaction is often so great as to raise the temperature higher than it was before the bath. But Dr. Louis Gignoux, of the University of Paris, and physician to the Hotel Dieu, of Lyons, says that he does not wait for the reaction to fully take place, but repeats the bath before the thermometer shows the same degree of heat that existed before the first bath was given. He also says that cold wet compresses are applied over the affected organs, the bowels in typhoid, the lungs in pneumonia, etc., constantly. There is one essential fact about which there is no dispute. It is conceded by all that in excessive heat lies the danger, and the contention is as to the best method of reducing it and holding it as nearly as possible at the normal standard.

Now, although it is not to be doubted that Dr. Gignoux has treated more than a hundred cases of typhoid successfully by the cold-water treatment, and that many of them were taken after severe complications had been permitted to arise, yet it is equally likely that others, of whose experience Professor Sée is the distinguished exponent, have not had satisfactory results from the use of so powerful an agent as cold water in cases where the complications were severe. It should be observed, however, that Professor Sée speaks only of severe and complicated cases, and he does not assert, as does Dr. Gignoux, that no medicine was given, and, as he highly favors quinine, we have a right to infer that there was a mixed practice. Dr. Gignoux's assertion that cases treated after Brand's plan, from the moment the diagnosis is confirmed, have no complications, and are therefore sure to recover, should be implicitly relied on, for all that might be inferred to the contrary by Prof. Sée's unfavorable observa-

tions on the cold-water treatment in complicated cases. There are only two methods of disposing of the excessive heat in fever. The first, and the one which has been practiced by the great majority of our profession from the earliest records of medicine, is to *prevent* the heat. Bleeding, drastic purgation, and narcotization were the great preventive trio that made up the practice of our fathers in medicine for generations; but they have been gradually falling off, and, as we believe, a more rational and successful method of preventing the excessive temperature in fevers has taken their place. The other method of dealing with the excessive heat of fever, is not to prevent its development in the system in the least, but to remove it with water at some degree of temperature cooler than the blood, as fast as it rises. Let us consider these two methods in the light of the physiological facts here noticed.

The excessive heat of the body, that which forms a part of the fever, and which constitutes all the danger, the other part being only the exalted vital action, which is nature's method of expelling morbific matters, is precisely the same in character as the normal heat which is produced under the stimulus of hygienic agencies, the only difference being in degree. There is nothing wrong, then, in the nature of fever heat; it is simply excessive in amount. As it has the same source as the normal amount of heat, both being evolved by the vital force, acting in one case under healthful stimuli to build up and sustain the tissues; in the other, acting in the defence of the organism against something inimical to it, any plan which lessens the resisting power of the vital force must contravene the purposes of nature in producing the exalted action of the heart and lungs. Now every substance in nature that is inimical to life, if given in sufficient quantity and persevered in long enough, becomes an antipyretic, although it may stimulate the vital force to the most violent resistance when first administered. Hence alcohol, in very large doses, lowers the vital power, and consequently reduces the excessive heat of fever, although in small doses it elevates the temperature by the expulsive action of the heart and lungs which immediately follows its use. Such is the case with quinine. Moderate doses increase vital action, and for that reason it is so extensively prescribed for chills during the cold stage, but when the hot stage supervenes, if a dose of twenty, forty, or more grains be given, the heart's action immediately lessens, and the excessive heat drops even below the normal standard. There is but one way of reducing the temperature in fevers—the use of cold; but every substance in nature that can be made to militate against the vital force may prevent not only excessive heat, but so much of normal heat that death will be the result. We have all seen the dead-drunk stupor of a man thoroughly alcoholized, and some of us have noticed that the breathing is very slow and stertorous, and the pulse is so feeble that it is scarcely perceptible, and the man is cold—so cold! and yet Professor Sée recommends quinine in massive doses, as, next to alcohol, the great remedy for fever. So here we halt between two opinions. Which shall we do, prevent the excessive heat, by lowering vital action, and thus interfere with nature's method of dealing with whatever is inimical, or reduce the excess by some method of abstraction? If the germ theory is correct (and there can be scarcely a shadow of doubt about it), the cooling treatment seems perfectly to accord with it, as the temperature most congenial to the development and action of these minute parasites is higher than that of our healthy blood, and when our fever heat is reduced they are rendered comparatively inactive. It seems useless to look longer for a substance that will destroy these bacteria in the blood without also impinging upon our own vitality; for all three of the great kingdoms of nature have been searched for two thousand years without our having found a harmless preventive of fever heat, and the bacteria have been with us all this time, and, as Professor Tyndall believes, have destroyed tenfold more of the human race than have ever fallen in battle. In the light of common sense and sound reason we are forced to adopt the cooling treatment for fevers. The only question is as to how that can be best effected. When I took my Degree in Medicine, and went out into the world glorying in the idea that my head contained the accumulated therapeutic wisdom of the ages, I soon found, what many others before me had found, that the results of our preventive treatment for fevers were very unsatisfactory. In simple kindness to my patients, I gradually commenced the use of tepid water, to reduce the heat of the skin, and in the course of time developed a theory and plan of treatment which I have followed for twenty-five years with the most

gratifying results. I have proved, to an absolute certainty, that the pouring of tepid water through a sheet, so folded that it will reach from the lower part of the hip to the axillæ, will, in a short time, two hours at most, reduce the highest fever heat to the normal standard, and hold it there for days, and even weeks, as in many cases of typhoid, which I have treated with invariable success, where the treatment began with the first exacerbation of the fever.

If any one of my medical brethren can give a sound philosophical reason for it, one founded in nature and physiological law, and can show that the results are invariably satisfactory, I will recommence the use of quinine and alcohol to goad the vital force when flagging in its efforts at expulsion, or to overpower it when it causes the heart and lungs to act with such force and frequency as to raise the vital heat to a dangerous degree. But one word about Professor Sée's idea of alcoholizing a typhoid patient to prevent the exalted vital action, the cause of the excessive heat. In my time I have had several calls to sit in council with my medical confreres who had treated their typhoid cases in the usual way almost up to the period of *articulo mortis*, a point past all hope from the use of any medicinal remedy known to the profession; and by simply adopting the tepid pouring process, the fearful internal heat was reduced to the normal standard, and held there by continued pouring, and equalized by applying artificial warmth to the extremities. In one notable case, that of Mr. Stanchfield, at Streator, Illinois, in the summer of 1869, my friend, Dr. Williams, administered a quart of brandy within the twenty-four hours previous to our council, not for the depressing purpose, as Dr. Sée uses it, but to stimulate the sinking energies of the system, and increase the peripheral action, the extremities having a great tendency to coldness since his "sinking spell" of the night before. All this time, however, the internal heat was in the neighborhood of 106°, above and below. He had been in a constant waking delirium for three days; no movement from the liver and small intestines for four days; tympanites to an extent that of itself would seem to render the case hopeless, and not a single encouraging symptom. All I did for that case, during the first eighteen hours, was to pour tepid water through a thickly-folded sheet that covered the whole trunk, and attended to warming the legs and feet, and arms and hands. I not only omitted the use of all stimulants, but did not give him even a spoonful of cold water during the first eighteen hours, on account of his unwillingness, in his half-unconscious state, to take anything into his mouth. Within one hour he was getting refreshing sleep; within eighteen hours immense quantities of exceedingly fetid bilious matter passed his bowels, and in three days he was clothed in his right mind and fully convalescent.

This is only one of many like cases. Are they all coincidences? Or is it not more reasonable to attribute them to the fact that the destructive high temperature was quietly reduced by the tepid pouring? With the light I have from my own extensive experience, not only in typhoid, but in every other fever known in this country, yellow fever included, I do not question the favorable results of the Brand system of using cold water. The desired thing is to cool the blood, and I have proved that it can be most effectually done by the free and persistent use of water whose temperature is but a few degrees below that of the blood, and that the cooling treatment in typhoid should be directed almost wholly to the trunk; the head needing no special attention if the blood is cooled in the citadel of life, the great vital organs. This treatment, instead of being unpleasant to the patient, is most quieting and agreeable. No reaction occurs, no exacerbations of heat; because the temperature is constantly held at the same degree by the tepid pouring, and the cool extremities are warmed by artificial means until the vital force gains full control. For many years I had great difficulty and annoyance in the matter of pouring the tepid water, as it involved so much wet and slop about the room, not to speak of the soiling and wetting of the bed clothes. This is now obviated by the introduction of a bathing cot, or fever bed, constructed with two bottoms, that upon which the patient lies being composed of a strong network of cotton cord readily pervious to water, and an impervious bottom of rubber cloth, so adjusted beneath as to catch and convey the water into a vessel at the foot. With this cot, any case of fever, taken at its incipiency, can be successfully treated with water whose temperature is agreeable to the patient.

The points to which I wish to direct special

attention are: 1. That the vital force, under all circumstances of health or disease, does its best to preserve the integrity of the organism. 2. That the increased action of the heart and lungs, in all fevers, is for the purpose of carrying the blood more rapidly to the depurating organs, that the impurities and poisons may the sooner be cast out; therefore, the administration of any substance, for the purpose of preventing or lessening the exalted vital action, in order to prevent the excess of heat, is simply fighting Nature. 3. The reason why excessive heat is dangerous to life, is because it directly converts impurities in the blood into poison, and serves, in all infectious and malarial causes of vital disturbance, as a fermenting condition to develop the bacterial germs into living organisms that destroy life by preying upon the blood and tissues. And last, the persistent pouring of tepid water over the trunk, through a folded sheet, so as to cool the blood to the normal standard, and hold it there, not only prevents all complications or morbid changes in fluid or tissue, which occurs solely through the influence of excessive heat, but it prevents all pain, and renders the patient comfortable during the whole time it takes the vital force to expel the cause of disturbance.

MEDICO-LEGAL OBSTETRICS.

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Scarcely any department of medical science, or legal science, as the case may be, is more neglected, both in the universities and out of them, than forensic medicine. We say "medical science or legal science," for it is extremely difficult to state exactly where the domain of medicine ceases and that of jurisprudence begins, and are rather inclined to the belief that the line is not to be drawn at all, but that like the vegetable and animal kingdoms, the one runs into the other, and as we have plants that are animals, and animals that are plants, so we have legal questions that are medical, and medical questions that are legal. Indeed, lawyers seem to pay more attention to the study than doctors, and the latter are not unfrequently "put to it," to answer the searching, medical, surgical or obstetrical questions, as occasion demands, of a well-posted and shrewd district attorney. In the universities abroad the course on legal medicine is well patronized by the students in jurisprudence, but decidedly cut by those in medicine. All this is not as it should be, and we would suggest that more careful and deeper study of the subject in general, which its interest and importance demand; a better knowledge of that, so to speak, neutral ground between law and medicine which belongs to neither, and yet is vital to both.

It is our purpose, in this paper, to consider, seriatim, a few of the points in forensic medicine bearing upon pregnancy. In the first place, can it be stated positively that a woman has been pregnant, or that she can or that she cannot become so? A woman that has been pregnant must have borne; it is well known that pregnancy and delivery leave traces behind whose presence is a tolerably certain proof that the person has been pregnant, but whose absence by no means proves the contrary. In early abortion these signs may not be relied upon, as there is not that marked laceration of the parts, more especially of the os uteri, that attends birth, either early or at full term. If the pregnancy has reached the tenth month of four weeks, or 280th day, it is very seldom that the small familiar scale-like scars on the abdomen and the cicatrical fissures on the orificium uteri are not found. If the person has only borne once, these and many other signs may, after a lapse of years, entirely disappear. With multipara this is never the case. One will very seldom be in a position to ascribe these effects to other causes than former pregnancies. Whether a woman will become pregnant or not is very difficult to say, because this depends upon circumstances that cannot be counted upon; with more probability the contrary is to be stated, especially, though not always, where malformation or probable hindrances are. With reference to simple flexions and versions, pregnancy follows proper treatment. To this rule there are, of course, exceptions, the percentage of which is decreasing.

The next point to consider is the menstruation—as regards whether a person can become pregnant who has never menstruated, or has only recently commenced having her menses? Absence of menstruation after puberty points to a fault in the formation of, or to disease of, the ovaries, whose integrity is necessary for ovulation and the attendant menstruation. Without ovulation conception is out of the question. And still it is, nevertheless, asserted that women who have never menstruated have

been pregnant. It is sometimes extremely difficult to get exact facts about menstruation, which can be, as to quantity and quality, so constituted that the person does not observe it; for her menstruation is a loss of blood, more or less abundant, that lasts several days. Little reliance can be placed upon the statements of women that they are pregnant without ever having menstruated. A young woman that does not regularly menstruate may, indeed, but still only in rare cases, become pregnant. There are many examples of persons becoming pregnant after a single coitus without ever having previously menstruated. On the other hand, it is doubtful if a pregnancy can take place after a suppression of the menses of several months' duration. Again, a person pretends that she is *enceinte*, or denies that she is so; can the truth be fixed?

By means of the signs that accompany pregnancy these questions can be decided. The subjective testimony of the person herself is unreliable; only the objective results attained by a thorough external and internal examination must be our guides. With the abdomen, are the breasts, as well as the other changes on the body, to be looked after. In this category are to be classed varix, œdema of the legs, fanlike injections, and distention of the capillaries, easily seen on one or both thighs; these are not necessarily conclusive, however, but rather, in a medico-legal view, invite our attention to pathological conditions that can also produce these same changes. How cautious and circumspect one should be is illustrated by the case of a maiden who, on account of a bleeding in the seventh month of pregnancy, was suspected of abortion. The monthly nurse and the physician, the latter on the statement of the former, affirmed that the party in question had borne. The maiden was condemned to six months in prison on November 6th, but on December 24th of the same year, 1872, was delivered in her cell of a healthy female child (Ann. d'Hyg., 2 Sér. xxxix, p. 137, Juillet, 1873).

On the other hand, where the menses are temporarily suppressed or delayed, for example, ten days or two weeks over the regular time, and then reappear somewhat more profusely than usual, the fact that abortion can take place at this early date is very significant. This phenomenon is quite frequent in uterine retroflexion, where conception is by no means impossible, and the discharge of the ovum, though accomplished by nature alone, devoutly unwished by the woman.

The cases that menstruate regularly throughout pregnancy and bear healthy offspring, as well as those that menstruate only once or twice after conception, should not be forgotten.

Can it be determined at what stage of pregnancy a woman is? If she acknowledges the suspected condition, her statements with regard to cessation of the menses, the accomplished coitus and movements of the fœtus in utero, will aid materially in fixing the period of pregnancy that she may have attained. If the existence of pregnancy is denied, we must depend upon the increased size of the uterus, upon the changes found at the neck of the uterus, upon the approximative weight of the fœtus. In the first few months it is difficult to affirm pregnancy with certainty.

How can it be shown that a person who claims to be pregnant is not so? The absence of the objective signs of pregnancy is a positive proof that no pregnancy exists. Only in the first two or three months could the internal examination be entirely unreliable; at a later period it is infallible.

Can a woman conceive without knowing it? It has happened that women in a drunken or anæsthetic condition have become pregnant. Consciousness and an active part in conception are by no means necessary. Experiments on women have confirmed what we knew earlier about the artificial fructification in animals. This fact, however, does not by any means prove that a person may have borne without knowing that she has been pregnant. Only an idiotic woman would deny her condition throughout the entire duration of pregnancy.

Can a person be pregnant notwithstanding that the genital organs possess the signs of virginity? This question is decidedly to be answered in the affirmative; numerous observations are on record where gravidity has taken place without the hymen having been disturbed; yes, it has even been seen to remain after delivery. Can a woman be pregnant without knowing it? This question would, at first glance, seem to be embodied in the one before the last, but upon nearer examination we see that, although a woman can conceive without knowing it, and can mistake her condition during the first half of gravidity up to the quickening, after that time it is impossible for her to ignore it. If she does not seek informa-

tion from those who can confirm her doubts, it is an evidence of bad will on her part. Can pregnancy cause fits of mental aberration, and does it interfere in general with that state known as "mens sana in copore sano?" Every kind of mental disease can develop itself during pregnancy, yet pregnancy, in and by itself, produces no impulse to steal, murder, or kill, etc, although such impulse has been in many instances, and will still be, ascribed to it. A woman *enceinte* possesses her free will, and is just as deserving of punishment, if she transgress the statutes, as when she is not pregnant; nevertheless, it is to be considered that a woman in this condition, which is to be regarded as an exceptional one, is more impressionable, and has less power of resistance, than in the ordinary manner of life.

Until what age can a woman become pregnant? Only in very rare exceptional cases does pregnancy appear after the age of forty-five years is attained. A glance at the Report of the Lying-in Hospital of Manchester, England, will show that from among 10,000 pregnant women received by the physician in charge 385 were from 40 to 50 years of age; 12 were 46; 13 forty-seven; 8 forty-eight; 6 forty-nine; 9 fifty; 1 each of 52, 53 and 54 years; only three, then, were over fifty years old. Women that in youth (20-25 years) have borne several children do not, as a general rule, bear after the fortieth year.

Can pregnancy extend beyond the regular time? From reliable observations it can be accepted that the ordinary pregnancy—from 270 to 280 days—cannot prolong itself beyond fourteen days. The time occupied by the act of labor itself is not included. The law declares every child legitimate that is born 180 days after marriage, and 300 days after divorce, or after the impossibility of cohabitation. In England, during a celebrated trial (1825), twelve out of seventeen obstetricians admitted that the accused was confined on the 311th day. According to the Prussian law the term of pregnancy for unmarried women is fixed at 285, for divorced or widows at 302 days. According to Hohl, the time ought to be extended exceptionally to 322, and even to 336 days.

In case of death of the *enceinte*, ought artificial delivery to be effected? In France no law exists that demands or forbids the delivery of a lifeless pregnant woman. The commission appointed by the Acad. de Médecine, in 1861, at Paris, to consider this subject, and report officially before that body, were of opinion "that a physician, convinced that he can extract a child capable of living from a lifeless pregnant woman, can, and ought to, perform Cæsarean section." The commission, however, preferred to leave the undertaking of the operation to the conscience of the physician, to giving out any legal instructions, which is to be much regretted. Nevertheless, it ought to be legally set down that the operation should be performed only on those that are really dead, and on such not before the 180th day of pregnancy; even under these conditions the success of the operation is doubtful, and the chances of the offspring for life minimal.

Such cases happen very seldom, it is true, but often enough to have some fixed legislation to meet them. In this country, as in France, all is entrusted to the skill and conscience of the obstetrician, which are great indeed, but doubtless he would be better satisfied if supported by the weight of law.

Sectio Cæsarea is older than the history of medicine or law. Traces of it are to be found in the mythology of the Greeks, who, without doubt, observed in their hecatombs that the young animal could outlive the mother. By command of Zeus, Hermes in this manner cut Dionysius from out the body of the dead Semele. Æsculapius, the founder of our science and art, was cut, by his father, Apollo, from the body of Coronis, previously killed by Artemis. Although mentioned in mythology, he actually existed, was surgeon-in chief of the Grecian armies, and rendered distinguished field service during the siege of Troy, before the walls of which city he dressed the wounded Greeks.

From the time of Rome, the Lex Regia, established by Numa Pompilius, has been handed down to us in the Pandects. This law forbade the interment of any dead pregnant woman, no matter at what stage, without the body having been opened. Pliny gives us several examples of children saved in this manner, and styles the operation Sectio Cæsarea. "Sicut Scipio Africanus prior natus, primusque Cæsarum a cæso matris utero dictus: qua de causa et Cæsomes appellati." "Simile modo natus et Manilius."

In later years, the Christian Church, having, on account of baptismal rites, a special interest in the preservation of this law, renewed it

through their canons; and that the practice was carried out, under the sanction of law, also in the Middle Ages, is proven by the fact that in the year 1000 A.D. there lived an abbot of St. Gallen and a Bishop of Constanz, who had been cut from out the bodies of their dead mothers.

From that period down to the present day, no law commands the performance of sectio Cæsarea upon the pregnant dead, and consequently no details are fixed as to what stage of pregnancy the operation can or ought to be carried out, under the circumstances. We now come to that division of our subject bearing upon the diagnosis of birth concealed and having occurred at a period more or less remote.

(To be Continued.)

Medical Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

At the session of March 7th, Professor William Pepper, M. D., read an article on the

Internal Administration of Nitrate of Silver, and on the Occurrence of a Blue Line Upon the Gums as the Earliest Sign of Argyria,

in which he said:—

The topical action of nitrate of silver given internally, even in small doses, may be said to extend throughout the entire gastro-intestinal tract, with, perhaps, the exception of the rectum. In addition to this, it appears to me to be established by clinical evidence that a certain amount of influence is produced on the continuation of the duodenal mucous membrane into the common hepatic duct, and possibly into the pancreatic duct. This local action is in part that of an astringent, but in addition it presents a peculiar alterative character. Its power of influencing nutrition enables the nitrate of silver to modify the morbid action of ulcers of the stomach or intestinal canal, and to cause the reduction of chronic inflammatory thickenings of the mucous membrane, and of hypertrophies of its glandular apparatus. Associated with this is its power of allaying morbid irritability of the nerves of the mucous membrane, and of influencing the secretions.

The exact form which nitrate of silver assumes after entering the stomach is not known, and probably is not the same in all cases. It is evident, however, that it cannot long retain its integrity. Probably it is sometimes converted into a chloride, though more frequently it would seem to unite with the albuminous peptones, forming a compound which does not coagulate albumen, and which is readily dissolved in albuminous liquids. In this form it may easily be understood how, even when given in minute doses, if frequently repeated and continued for a considerable time, it may produce a powerful action throughout the entire extent of the mucous tract before mentioned.

Among the special morbid conditions for which it has been recommended, on account of its local action, I would especially mention the following, based upon my own personal experience: in the stomach—gastric ulcer, chronic catarrhal gastritis, especially with frequent vomiting, or with pain dependent upon morbid irritability of the nerves of the mucous membrane; in the intestinal canal—cases of follicular (catarrhal) enteritis, both in the adult and in the child, subacute and chronic dysentery, chronic typhlitis, and tuberculous diarrhœa. I have also lately obtained remarkable results from the administration of nitrate of silver in cases of gastro-hepatic catarrh, with or without jaundice from occlusion of the ducts by tumefaction of the mucous membrane. Recent observation has, moreover, led me to believe that the administration of this drug in typhoid fever, as originally recommended by Boudin in 1836, is a very valuable element of treatment in this important affection. In addition to all of these must be mentioned the great value of injections of nitrate of silver in many forms of rectal disease.

With regard to its absorption and effects upon the general system, the evidence is no less satisfactory. The fact of its absorption does not, indeed, admit of doubt. Apart from the positive therapeutic effects observed, there is the actual proof of the detection of silver in various internal organs, and of its deposit in the skin after its long-continued administration. Given thus internally, the chief action of the salt would seem to be upon the nervous centres, whose nutrition it possesses the power of modifying to a considerable degree, though the precise mode in which this is accomplished is still uncertain. The diseases for which nitrate of silver is used in view of its constitutional effects are chiefly affections of the nervous system, such as epilepsy, chronic meningitis, and sclerosis of the spinal cord.

In regard to a remedy of such value and wide application, it is important to consider what difficulties attend its administration, and how they may be best overcome. The first difficulty which suggests itself is connected with the local irritant action which nitrate of silver occasionally produces. This, however, can always be avoided by giving the remedy in pill form, and by graduating the dose carefully in accordance with the sensibility of the stomach. Thus, my own rule is to begin the administration of this drug in doses of from one-sixth to one-fourth of a grain three times a day, to give it in pilular form, and soon after a little light food has been taken. If necessary, its irritant action may be still further guarded against by combining with it a small quantity of opium.

It is usually stated that when the local action

on the alimentary canal is desired, the drug should be given one or two hours before meals, on an empty stomach; while when the constitutional effect is desired, the pill should be given after meals, during the process of digestion. In most cases where nitrate of silver is given for its local action, it is necessary to employ a diet carefully restricted, both as to quantity and character; and it has seemed to me that the good effects of the remedy are not interfered with by its being administered half an hour to an hour after a very light meal, especially of a fluid character, such as skimmed milk or broth. It is certain that the danger of causing gastric irritation is much lessened when this drug is thus given, instead of being given on an empty stomach before meals. In cases where the diet allowed is not so rigidly restricted, and considerable quantities of food are taken at each meal, and yet the administration of the silver on an empty stomach causes irritation, I have found it useful to give a few spoonfuls of light arrowroot a couple of hours before the regular meal, and to administer the silver immediately after this.

The second great difficulty attaching to the internal administration of nitrate of silver is the tendency to discoloration of the skin by the deposit of the silver in its tissues.

Many rules to avoid this have been offered. My own, for a number of years, has been to continue its administration in doses of from one-fifth to one-third of a grain thrice daily until thirty grains have been taken; to then suspend it for one month; after that interval to resume and continue its administration until fifteen grains more have been taken; and again to withdraw it either permanently or for another month, to be then followed by a final course of fifteen grains, making sixty grains in all. One great defect, however, of such rules, is that they only fix a minimum dose without reference to the individual features of the case, and, of course, without any accurate knowledge of the proportion of the remedy absorbed in different instances. Thus, among other considerations which deserve attention, is the weight of the patient. In the case of nitrate of silver, as of many other drugs capable of producing an effect on the whole body, it cannot be doubted that one of the factors, in determining the amount that can be tolerated in any given case, is the weight of the subject. But when we consider the extreme value of this remedy in certain conditions, it becomes evident that what we need is a rule which will enable us to administer, in any given case, the maximum dose consistent with entire safety. It is with the hope of establishing such a rule that I venture to bring forward the results of certain recent observations that I have made, which go to show that *the earliest sign of argyria, occurring before there is any danger of the slightest discoloration of the skin, is a peculiar blue line on the gums.*

[After stating that this line had already been observed by Dr. Branson, Dr. Pepper added:]

A point of importance is its close resemblance to Burton's blue line on the gums, due to the saturation of the system with lead. Indeed, in some of the cases I have recorded, it would have been impossible to determine, by inspection alone, whether the blue line was due to lead or not. It may be said, however, that in other instances the color of the silver line is darker and more decidedly blue, and also that there is a tendency for the discoloration to extend to a greater distance on to the gum from the line of junction with the teeth, and also for it to affect the mucous membrane of the lips near the junction with the gums. It will hereafter be necessary, however, in any case where a blue line is observed on the gums, to investigate the history of the case, not only with regard to the action of lead, but also of silver.

At the meeting of the Society on June 6th, a very exhaustive report on the

Meteorology and Epidemics of Philadelphia in 1876

was read by Dr. Richard A. Cleeman. He observed:—

The most striking feature of the bills of mortality for last year is the increase in the number of deaths from *typhoid fever*. The mortality from this cause is 774, nearly double that for the previous year, and has not been approached in height since 1865, when there were 773 interments of those dead from the disease, in a population one-third less. After that year, for some reasons an exceptional one, the annual numbers of deaths from the fever were diminished one-half, and have little exceeded that proportion in any year until the last.

[After showing that this was probably owing to atmospheric influences, the speaker added:]

A probable source of pollution to the air, in my estimation, and one sufficiently extended to explain so general an epidemic, is the cesspool system of disposal of alvine excreta which prevails in Philadelphia. The vault which this requires occupies a place in the rear of every house, except that the meanest tenements are sometimes clustered round one which does duty to the whole group. These receptacles are often very deep, and their contents frequently undisturbed till their level approaches that of the surrounding surface. Directly from these the foul air carrying the poison ascends to reach the persons of those who visit the contracted houses which cover them; or it may even enter the dwelling-house, the doors and windows of which sometimes are but a few feet distant from the outside office. Again, the pits are often but imperfectly lined, allowing the noxious matters to penetrate into the surrounding soil: whether the poison can thence undisturbed reach the atmosphere above, may be doubtful; but as our streets are constantly being excavated for laying down or repairing gas and water pipes, and the yards of the houses and adjacent lots dug out for new buildings, the infected soil is likely to be at some time exposed directly to the upper air.

At the same meeting a paper on

Changes in the Nails in Fever

was read by Morris Longstreth, M.D., Physician for Out-patients, and Pathologist and Curator to the Pennsylvania Hospital. After speaking of some changes in the nails he had observed when he himself was passing through an attack of relapsing fever, he proceeded:—

Whilst, as is evident, these peculiar markings are of value in their indications of past events, is there nothing to be observed in the nails, which, at the commencement of and during the continuance of the fever, is of significance; or do we have to wait until the growth of the nail is resumed, and the white marking, as the trace of the fever process, has been protruded beyond the root and lunula? During the last four months, through the kindness of Drs. Da Costa and Hutchinson, I have been able to carefully observe, during the febrile movement, the appearances presented by the nails of many patients, especially the parts near the root, and also the relation which the epidermis has borne to the root of the nail. Here I have found a constant peculiarity.

Let me note the appearances that were seen. In the man who occupied Bed 16, during the relapse that occurred, in the very first days after the temperature had risen, the skin at the root, instead of separating from the surface of the nail, as it does in normal growth, maintained its adherence; in the latter days of the fever-relapse the skin was seen to be stretched forward on the surface of the nail to the extent of more than a line. In other words, the epidermal layer of the skin around the root became adherent to the horny nail further in advance of the root (by about a line) than is seen under normal conditions. The appearance is similar to that which any one may see occasionally on his own nail, or may produce by scraping with a knife deeply under the free edge of the posterior fold. This scraping in some way leads to adhesion of the epidermic layer of the skin on the posterior part of the nail; this layer, adhering, and, as the nail grows, being carried forward, and becoming stretched on the dorsum of the nail, covers the area of the lunula. By further growth (after the scraping experiment) this adhering epidermal layer is first separated from its skin attachments, and lastly is separated from the horny nail, leaving the surface which was scraped rough or lustreless. In the patient of Bed 16 the markings on the nail from the primary paroxysms of fever were seen in advance of the adhering skin during all the period of the relapse; they were within the area of the lunula, and therefore less distinct than subsequently.

In some cases of typhoid fever which I have seen lately, during the existence of the febrile movement, the condition of the skin around the root of the nail differed from that which I have described as usual. The patients to whom I refer were sailors, and in them I found that, from the greater hardness and dryness of skin incident to their manual labor, the epidermis was not adherent, but cracking and separating around the root of the nail. The condition of the nail underneath the projecting, but cracked and not adherent, skin was similar to what I have found in other cases in which I have artificially removed the adherent epidermic layer, *i. e.*, the surface was rough, and appeared to have a membrane adhering to it. In other words, the nail was not perfectly developed, and, although it had become hard, had not become smooth, polished, and truly horny. Thus, by carefully noting the adhesion of the skin to the nail, or the condition of the nail when such adhesion has not occurred, we have the means, independently of the phenomenon of fevers, of determining the occurrence of checked nutrition.

Therefore, adhesion of the epidermis to the nails, on all the digits, as I have described it, or the appearance as I saw it in the sailors referred to, taken in conjunction with a white line or furrow, would, I take it, be diagnostic of a relapse of fever, or other process which interfered markedly with nutrition.

Finally, it remains to speak of the minute changes in the nutrition of the nails which lead to the varied appearances presented by them. We have to account for the occurrence of less of lustre, and for that of the white or anæmic streak and of the furrow or ridge that commonly make their appearance. The latter two changes I consider to be identical; the one or the other, or perhaps both, result from the varying severity of the nutritive disturbance, and are therefore to be looked upon merely as differences of degree in one and the same process.

Let us consider first the loss of lustre. This diminution of the physiological mother-of-pearl appearance of the nail is, according to my observation, seen in advance of the anæmic streak, *i. e.*, nearest the free extremity of the nail. It never continues to exist very long, for continual use soon restores the normal polish of the surface. The loss of polish extends also backward toward the root, until it reaches the part of the nail developed normally, subsequently to the febrile process. That is, this change extends over all that portion of the nail which exists as the root, or is concealed beneath the fold of skin at its posterior part, during the period of nutritive disturbance. The lustreless part, in advance of the anæmic streak, corresponds to the area to which the epidermis adheres during the febrile process, or to the part which, when the epidermis does not thus adhere, appears rough, as though covered with a membrane.

The growth of the nail during the early part of the fever, and in the latter part, varies often very considerably, as the indications distinctly show. For example, what are the appearances presented by the nails in an uncomplicated case of typhoid fever in a moderately severe form? In the cases which I have observed, there have been seen, nearest the free extremity of the

nail, first the area of loss of lustre, then behind this the whitish streak, and behind this again the furrow. The nail, however, from behind the lustreless area has been depressed, the depression attaining the maximum in the furrow. From the depth of the furrow the nail has remounted more or less abruptly to the normal level, and has resumed the usual tint. The longitudinal striæ have been distorted in the area of the depression, and the nail in this area has been withal narrower than in the normal condition. These changes have corresponded with the fever history. The accession of the attack has been gradual. There has been adhesion of the epidermis, leaving as its trace a loss of lustre in advance of the white line. The new elements at the posterior border of the root have been slightly less developed, resulting in an opaqueness or whiteness. In the early part of the fever, growth has not ceased—note the stretching of the epidermal layer—the horny lamina has been pushed forward over the softer layer of cells beneath it, by the constant production, although imperfect formation, of the new elements which, at the back of the root, have been becoming horny scales. Toward the end of the fever period, when the nutritive disturbances have become more profound, the development of the new-forming elements at the posterior border of the root has been more interfered with, resulting in a loss of substance. When the fever has ended, the normal growth of the nail has been resumed.

In other cases which I have seen (for example, a case of acute rheumatism), the onset has been sudden and severe; the nails have presented the loss of lustre in advance; directly behind this has come the furrow, commencing with an initial, abrupt descent, having a variable width, and then gradually remounting to the normal level in correspondence with the gradual defervescence.

The following remarks on

Relapses in Typhoid Fever

were read by J. M. DaCosta, M. D., Professor of the Principles and Practice of Medicine in the Jefferson Medical College:—

First, let me say exactly what I understand by a relapse. I mean a return of the symptoms of the malady in all directions: return of diarrhœa, of eruption, of fever phenomena, of delirium, of pulmonary congestions. I do not simply mean those slight and mostly transitory accessions of trouble which we sometimes see in consequence of bad nursing, as of the patient being needlessly disturbed, or allowed to take improper food. I mean, therefore, a fresh outbreak which runs a definite course, and is often protracted, and may be dangerous.

It is only of comparatively late years that the occurrence of true relapses in typhoid fever has been admitted, and even now the fact is denied by some; while accurate observations on the mode and cause of the return of the affection are still greatly needed.

The relapse generally comes on in the second or third week of assured convalescence, and in the second oftener than in the third. It is not, I find—and in this the dissimilarity to the first attack is marked—preceded by the prodromic symptoms so common in typhoid fever. But abruptly, and almost without warning, the patient passes from comparative health into a decided febrile malady; pains, furred tongue, diarrhœa, enlargement of the spleen, soon appear, and on the fourth or fifth day the characteristic rose-colored rash is seen. Now delirium manifests itself; the temperature, which has risen rapidly, remains more stationary; and the case progresses with every symptom of the first attack to a more rapid issue, convalescence being the rule. Yet even the renewed convalescence may not end the trouble. Thus I saw a case in consultation, in which the second attack terminated in rather less than two weeks, but, after an interval of about the same period, another relapse took place, and this third attack became much protracted by intense pulmonary congestion, and several violent intestinal hemorrhages happened after the sixty-sixth day of the original seizure. Fortunately, however, the lad in whom these untoward events occurred recovered.

In these long cases there is great risk of the patient dying from sheer exhaustion; and even in less protracted cases a fatal termination may happen, from the high temperature or the intestinal complication. But on the whole I am correct, I know, in stating that the chances of recovery are always far better than in the first seizure.

As regards the cause of these relapses I am unable to offer a satisfactory explanation. They are attributed to errors in diet, and in several of the cases I have seen these seemed to have started the mishap. But errors in diet, which are not uncommon, usually occasion fresh outbreaks of diarrhœa, but not a typical fever attack, which is not a frequent occurrence. Most likely is it that a fresh poisoning takes place, either from redevelopment of the poison in the body, whether by the intestinal glands or elsewhere; or because part of the poison has remained latent since the first exposure, and owing to some exciting cause is called later into maturity—just as we see fresh outbreaks of malarial fever after worry or fatigue, and when there has been no chance for a new infection.

Let us recur to some of the symptoms of the relapse, and inquire whether they differ from those of the primary seizure. First, of the eruption: this, as already stated, comes on earlier; it is generally found on the fourth day, and is, as a rule, somewhat coarser and redder. It disappears on pressure, though not quite so quickly. It comes out in crops, not, however, with the same readiness; in other words, the early spots are more likely to last until the whole rash fades.

The appearance of the tongue is apt to be the same as in the first attack. Yet there are a few

phenomena worthy of notice. I have often observed, indeed, have learned to regard it as almost characteristic, that the tongue in typhoid fever shows at the tip a wedge of reddish or brownish surface free from coat. This rudely triangular space becomes covered with a coat as the disorder begins to decline, or else assimilates in appearance to the general aspect of the organ. Now, in the relapse this look of the tongue will also be perceived, but not generally either with equal distinctness or frequency. The same may be said of the deep transverse fissures found in severe instances of the malady.

Of the other symptoms of typhoid fever, not one exists that may not be equally present in the relapse; diarrhœa, meteorism, pulmonary engorgement, delirium, present nothing unusual or different. Nor are the complications of intestinal hemorrhage or milk leg unknown. In a case that came under my notice, phlegmasia dolens proved a troublesome and tedious complication. Enlargement of the spleen happens as in the original attack, and I learn from the article on typhoid fever in Ziemssen's Cyclopædia, that Gerhardt makes the statement that, in many cases in which a relapse takes place, the enlarged organ is not diminished during the non-febrile period which intervenes between the original attack and the relapse.

The question of the temperature during the relapse has interested me much. Nor, with the exception of some allusions to it by Wunderlich, can I ascertain that it has been specially studied. It has, I find, these peculiarities. Unlike the graduated ascending course, until the evening of the fourth or fifth day, which is the rule in ordinary instances of typhoid fever, the temperature bounds within twenty-four hours to a decided fever temperature, remits 1 to 1½° the next morning, and by the evening of the second day is a degree or more higher than on the first day, the thermometer very commonly marking 104°. Then, for from five to seven days, according to the severity of the attack, the evening figures read about the same; and a morning remission of about one degree, or somewhat more, happens, very similar to what we observe in the first attack after the initial period has passed. Subsequently occur the same more marked morning remissions and less severe evening exacerbations, until the temperature in a zigzag manner approaches to the normal that we observe during typical cases of the typhoid attack. Yet, as here, until convalescence is established, local complications arrest or reverse the daily descent. Neither do we always find, during the height of the relapse, that the temperature is as regular as described. It may sink almost continuously for the first three days after it has reached the height occasioned by the returning fever, and then for three or four days more gradually ascend without any morning remission, yet subsequently, as defervescence sets in, show the characteristic zigzag decline alluded to. The speaker concluded by detailing a case.

At the meeting, July 4th, the description of several cases of

Hemiopia and Decussation in the Optic Chiasm

was read by George C. Harlan, M.D., Surgeon to Wills Hospital, Ophthalmic and Aural Surgeon to the Children's Hospital, during the course of which he remarked:—

The theory of the semi-decussation of the fibres of the optic nerves in the chiasm is often spoken of as Wollaston's Theory. Wollaston is generally supposed to have been the first to suggest it, in 1824, to facilitate the explanation of a transient hemiopia occurring in his own case; but it is known that Sir Isaac Newton advocated the possibility of a semi-decussation in 1704. The name Müller is also associated with this theory, and it has been adopted, without question, in nearly all the standard text-books on anatomy, physiology, and ophthalmic surgery.

Within a few years this long rest has been broken by the defection of a number of pathologists and physiologists, who have advocated the theory of total decussation, maintaining that all the fibres of each optic tract pass across to the eye of the opposite side. The weight of authority and the best of the argument are still on the side of the older theory.

Though the theoretical discussions, which have been considerably extended on this subject, are often extremely ingenious and always interesting, any decision reached through them is, after all, merely an opinion, and no observations are positively conclusive that are not confirmed by post-mortem examination. I believe that wherever post-mortem evidence is entirely unequivocal, it will be found on the side of semi-decussation.

Supposing the theory of semi-decussation to be correct, an interesting point in the minute anatomy of the retina, that must depend upon the study of hemiopia for its elucidation, is the distribution of the nervous filaments at the dividing line between the two halves of the retina. The observations upon the exact position of the line of demarcation in hemiopia have been too few, and not sufficiently in accord with each other, to be much more than suggestive: as illustrated by the first case reported above, this line may even vary very considerably at different stages of the disease, while still continuing perfectly symmetrical in the two eyes. It is a significant fact, though, that whenever observers have not contented themselves with stating that half the field of vision has been obliterated, but have been careful to define the limits of the obscured portion with accuracy, it is found that this portion has been a little less than half. This, as far as it goes, supports the theory of Hirschberg, that there is a retinal zone, of about six degrees, which would be halved by a vertical line, drawn through the point of fixation, supplied in common from both optic tracts.

Another paper was read, on

The Ophthalmoscope as an Aid to Medical Diagnosis,

by Morris J. Lewis, M. D., Assistant Physician to the Children's Hospital. The speaker narrated a number of illustrative cases, and observed:—

It is not in well-marked cases of meningitis, where there is no doubt about the diagnosis, that the ophthalmoscope is most valuable, but in the obscure forms, particularly in the tubercular meningitis of children, and in meningitis complicating the exanthemata, where the outset is so often insidious. In metastatic meningitis, Huguenin considers choked disk as one of the most reliable of all signs. Ziemssen states that the stiffness of the neck may be entirely wanting in cases of cerebro-spinal meningitis, and Paoulucci even reports a case, verified by autopsy, in which there were no cerebral symptoms whatever; but neither of these authors reports the condition of the eye-ground.

The questions, What precise value is to be placed upon the ophthalmoscopic appearances in the diagnosis of intra-cranial diseases? and, What are the causes of the pathological conditions so discovered? have not yet been definitely answered, although there has been no want of diligent research in this direction by competent observers. Those who first used the ophthalmoscope, in cases of cerebral disease, were much more positive in their statements as to the differential diagnosis between the pathological changes discovered in the eye-ground, and their relative value as diagnostic signs, than subsequent observers; thus, Dr. Clifford Allbutt defines choked disk or ischæmia papillæ as the signal of intra-cranial tension, and neuritis as the signal of intra-cranial irritation, and states that these can be differentiated.

Acknowledging, for the sake of argument, the difference between the conditions, a second difficulty arises, for inflammatory and obstructive changes in the disk are frequently associated, either being the consequence of the other; both conditions, therefore, being present at the same time, it would manifestly be impossible, by mere ophthalmoscopic examination, to state which was the primary trouble, though this may be said not to be an objection to the theory, but rather a proof of the immature state of our knowledge.

It is not only in cases of brain tumor that the ophthalmoscope reveals morbid changes, but also in any condition that produces increased intra-cranial tension; this is particularly the case in the various forms of meningitis with ventricular dropsy; and, indeed, according to the statistics at present obtainable, the percentage of changes in the eye-ground in this condition is higher than in brain tumor. Thus, in the 90 cases of meningitis reported by Bouchut and Heinzel, neuritis or atrophy was found in 94.33 per cent of the cases. Dr. Hock (*Archives of Ophthalmology and Otology*, vol. v, No. 1) differs from the majority of observers as to the appearances of the fundus of the eye in meningitis, and states that, in his experience with cases of basilar meningitis in children, he has found the retina to be the part principally affected, and the optic disk rarely if ever at all swollen; he, however, draws no conclusions. Bartalot (London *Medical Record*, August 15th, 1876) arrives at very much the same opinion after observing carefully twenty-four cases. According to the former observer, infants show a greater predisposition than adults to the alterations of the optic nerve in the course of cerebral disease.

The second question, viz., What are the causes of choked disk? is not as easily answered as the first. According to Wadsworth (*British Medical Journal*, November 5th, 1874), "the direct progression of inflammation, from the base of the brain, along the optic nerve to the eye, has been anatomically proven only in rare instances," and Pagenstecher (London *Ophthalmic Hospital Reports*, vol. vii) states that he has never been able to satisfy himself that the morbid process has originated in this manner, and that the more he has employed himself in researches of this kind the more doubtful has he become as to this mode of origination of the changes met with in the disk; he strengthens his statement by reporting carefully seven cases, in four of which the "structure of the optic nerve, so far as it was examined, was perfectly normal," and in three other cases, "along with complete atrophy of the disk, there was also atrophy of the optic nerves all through the portions which had been removed for examination." These changes in the nerve he, therefore, looks upon as being a consequence, and not a cause of the choking.

The mechanical theory finds the most supporters at the present day, although the precise method of the origination of the obstruction to the return of blood from the eye is still a matter of dispute.

Von Graefe explains it by an increased pressure within the cranium retarding the return of blood by pressure upon the cavernous sinus, direct or indirect, which thus causes a venous stasis within the eyeball. Michel believes that the pressure on the sinus is brought about by ventricular effusion distending the infundibulum, and, as a consequence, interfering with the circulation in the cavernous sinus. An objection to these views arises in the fact that the sinus has quite rigid walls, and that the amount of pressure necessary to compress it would have to be far greater than that which is ordinarily found in intra-cranial disease; and, besides this, Seseman has shown that a free communication exists between the facial and the ophthalmic veins, which is sufficient to remove all stasis of the retinal veins, even should the sinus be occluded.

Schwalbe, by experiments, has proved that it is easy to distend the permeable space existing between the two sheaths of the optic nerve, from the arachnoid cavity, and that the fluid

collects around the insertion of the optic nerves; further experiments, by Manz and Schmidt, show that the fluid finds its way into both optic nerves, although only one arachnoid cavity be injected.

Axel-Key states further that the ventricles of the brain are in connection with the sub-arachnoid space, and that this latter space connects with a second space between the inner sheath of the nerve and the nerve itself.

It is stated that the choked disk is most frequently found in association with growths occupying the cerebellum and the posterior parts of the brain; the probable explanation of this fact is to be found in the greater likelihood of interference with the flow of blood in the sinuses and venæ Galeni, by growths in this position, and, as a necessary consequence, of effusion into the cavities of the brain. Benedict considers that an irritation conveyed by the sympathetic to the optic disk, causing an increased vascularity of the parts, is the main factor in producing choked disk, and alludes to his experiments in this direction with the constant current. In this, Pagenstecher follows him. Abadie calls attention to the experiments made by Claude-Bernard, in which section of the trifacial, behind the Casserian ganglion, caused ulceration of the cornea, conjunctiva, and tongue, although upon examination of the nerve trunks they were found to be perfectly normal; and suggests that the changes in the optic disk may be explained in an analogous manner. These last two theories, however, have very few followers.

In some cases of Bright's disease a condition in nowise distinguishable from choked disk is found. I do not refer to the well-known retinitis albuminurica. In only one such case, however, can I find the record of a post-mortem examination, and in that case the brain is said to have been normal. It is reported by Mr. R. Brudenell Carter. Much valuable information can be obtained by examining the eye-ground in cases of Bright's disease. The discovery of pronounced retinitis, or of marked retinal hemorrhages, should lead one to make a graver prognosis as regards length of life.

In this connection the subject of cerebral hemorrhage naturally arises, and as the diseased condition of the arteries, which is generally the cause of the hemorrhage, is frequently associated with renal disease, the condition of the retinal arteries and of the retina may be of great diagnostic value. In looking over the Pennsylvania Hospital case-books for the past three years, I find that every case of cerebral hemorrhage was associated with contracted kidneys and hypertrophied heart. Unfortunately, however, no ophthalmoscopic examinations were made before death, nor were the eyes examined after that event took place.

While believing that the ophthalmoscopic signs are of great value in forming a correct diagnosis of cerebral disease, I do not think that they have the transcending significance which Bouchut, in his recent publications, attributes to them; but I believe that they should always be considered in connection with the other symptoms, and that the physician who does not use the ophthalmoscope in these cases is neglectful of one of the most important aids in the elucidation of a difficult subject.

Editorial Department.

Periscope.

Hydrobromic Acid.

Edward Woakes, M.D., Surgeon to the Throat Hospital, London, writes to the *British Medical Journal:* This drug having established its claim to antagonize the ear symptoms occasioned by large doses of quinine, there appears to be but one step between this fact and the inference that it should be equally efficacious in analogous states of the ear arising from other causes. Viewing certain forms of tinnitus as possessing marked analogy to the condition induced by quinine—one, that is, of congested labyrinthine circulation—I have prescribed certain remedies with a view to the relief of this most distressing symptom; among these codeia, with some advantage, but not in any degree comparable to the results attending the hydrobromic acid. It may be needless to remark that the cases should be selected with a view to their appositeness to the presumed physiological action of the drug; and the indication which should be regarded as most distinctly pointing in this direction is that the noises have more or less of a pulsating, or, as the patient will describe it, a "knocking" character. The existence of vertigo, if present, will rather confirm the indication for the exhibition of the acid. The subjoined cases are intended to illustrate these remarks, and are taken from a number of others under recent observation.

F. C., aged twenty-four, was the subject of otorrhœa media, associated with tinnitus of a very distressing character. This latter symptom persisted long after the others had yielded to treatment. The patient, a fairly intelligent mechanic, described the noises as increased on lying down, when they became "like the knocking of his heart." He was ordered fifteen minims of hydrobromic acid in water every

four hours. At his next visit he stated that, after taking three doses, the noises had much diminished, an improvement which steadily continued, so that at the end of a week he considered himself well.

J. T., a chorister, aged thirty-three, presented an acutely inflamed condition of the lining membrane of the middle ear, which projected through a large central perforation of the drum-head. The external meatus was red and tender in its deepest portion, and near the membrane were two granular polypoid growths. There was abundant otorrhœa, of a very fetid description. After removal of the growths from the external canal, the subsidence of the inflammatory state of the tympanic cavity, together with the discharge, he still complained of pulsating noises in the head, increased by walking or stooping, headache and occasional giddiness. The hydrobromic acid was given, as in the previous case, with an equally rapid disappearance of all the symptoms associated with the tinnitus.

Two points appear important to secure the success of the drug. 1. The auditory apparatus must be clear of any well marked objective morbid process. 2. The tinnitus should present the characters of congested blood-supply, already alluded to. In mentioning the foregoing facts at a recent discussion at the Harveian Society, owing to the lateness of the hour, the distinctive indications for the successful administration of the drug were not insisted upon, an omission which, I trust, this communication will sufficiently rectify.

Salicylic Acid in Rheumatism and Typhoid Fever.

A Paris correspondent of an English contemporary gives the experience with this drug, of Prof. Sée of the Ecole de Medecine. Prof. Sée had promised to give the result of his further experience as to the efficacy or otherwise of salicylic acid in well-marked febrile articular rheumatism. M. Sée has redeemed his promise; and, in a recent clinical lecture, he stated that in this affection the curative power of salicylic acid, or rather of the salicylate of soda, which he has adopted as a more convenient preparation, is simply marvelous. He has also found it very efficacious in the chronic or non-febrile forms of rheumatism; and this would seem to be the limit of its therapeutic properties, at least as an internal remedy. He is not prepared to explain its *modus operandi;* but he is certain that it does not deserve the name of antipyretic in the proper sense of the term. That it reduces abnormal temperature there can be no question; but he has never noticed a fall of more than one degree or a degree and a half, and even then this fall was not persistent or regular, as after a time, whether the medicine were continued or not, the temperature rose to the same height as when the medicine was first administered. This would seem to accord with the experience of other observers. M. Sée is of opinion that salicylic acid and its preparations cure rheumatism, not by their antipyretic properties, but by some specific action on the morbific agent which generates the affection; for in these cases, besides their sedative and anodyne action, they seem to have some special influence on the morbid tissues, which they modify in an amazingly short space of time. He noticed, in more than one case of acute articular rheumatism, that the swelling, heat, and pain of the joints had disappeared, as if by magic, in less than forty-eight hours after the first dose of the salicylate of soda, and that without the aid of other adjuvants, beyond keeping the patient and the joints enveloped in cotton-wool. He warns physicians against employing salicylic acid or its preparations in typhoid fever; for, according to his experience, they are not only useless, but he would consider them dangerous in this affection. In some cases that came under his observation, he noticed that all the patients, without exception, became delirious; and in order to ascertain whether the delirium was due to the malady or to the medicine, he suspended the latter, and the delirium immediately ceased; when the medicine was resumed, the delirium came back. This experiment was repeated several times, and always with the same result, which, to my mind, is conclusive enough to induce other practitioners to be on their guard during the employment of the drug in question. Moreover, M. Sée foresees another danger in its administration in typhoid fever: owing to its corrosive properties, he would be afraid of perforation of the bowels, to which there is always a tendency in this affection, and the medicine would perhaps accomplish what the malady failed to effect.

The Operation for Phimosis.

The following directions are given by Dr. John Frissell, in the *Transactions* of the West Virginia Medical Society. Sometimes, especially in grown persons, the adhesions between the glans and prepuce do not exist, or are but slight, but in the great majority of cases among children, they are quite close and firm, rendering the separation of the membranes often a matter of much difficulty. Oftentimes a common silver probe will be found not sufficiently stiff to effect the necessary separation. In such cases, a good sized knitting needle, with a smooth, rounded point, will effectually serve the purpose. After the skin and membrane in front are separated sufficiently, a director may be passed up between the glans and prepuce, and all that can be gathered up of the latter should be divided by a single cut of a sharp-pointed bistoury or pair of scissors; the separation of the remaining portion of the prepuce and membrane (a portion of the latter being nearly always left) is then very easily effected. Should the frænum be too short, it can be divided to any required extent. I have found it best to stitch together the mucous membrane and the skin; healing is sometimes more rapid,

and there is less danger of hemorrhage, an accident which has happened to me twice at least, to my great annoyance, with patients who did not reside in the city, and besides the operation looks neater and has the appearance of a better finish. I am bound to say, however, that in cases where this has not been done, the final result has been equally satisfactory. By this method the glans penis is completely freed and exposed, the prepuce, in the course of time, becoming nearly natural in appearance. Where operations are performed in this manner, little or no after treatment is required, except cleanliness and water dressings. Many cases I have not seen a second time, and the recoveries have all been perfect. A mother's attentions are sufficient.

When Typhoid Fever is Contagious.

In an article by Dr. J. W. Lazzell, in the *Transactions* of the West Virginia Medical Society, the author draws the following inferences:—

1. That "typhoid fever" in its ordinary form is but very feebly contagious.
2. That a malignant or putrid form is communicable, and sometimes eminently so.
3. That a case may occur, seemingly sporadic or spontaneous, and yet prove a focus of contamination.
4. That constitutional predisposition renders some persons more liable than others, such persons taking it from the slightest exposure; and while the rule is to be affected only once, yet exceptional cases may contract it the second, and even the third time.
5. That atmospheric peculiarity renders it more virulent and communicable some seasons than others, a hot and dry season favoring, probably, its propagation.
6. That the system may be saturated or impregnated with the virus, which may remain latent for three or four weeks, or more, only requiring some disturbing cause to arouse it into action.
7. That the virus may remain for a length of time in clothes or fomites, provided they be kept in a confined condition, excluded from the air.
8. That stimulants were unsuited to the patients even in the later stages, and that, provided they were under a good system of management, the less medicine the better, as a number of the last cases treated on lime and water, and milk, did well, and all recovered.

Bovine Virus for Vaccination.

In the *Transactions* of the Missouri State Medical Society for 1877, Dr. R. M. Higgins reports very favorably on the use of bovine lymph in vaccinating, as superior to humanized virus. He has used the form dried on quills, with ninety-eight per cent. of success. He also presented very many testimonials of other physicians, equally flattering.

Reviews and Book Notices.

NOTES ON CURRENT MEDICAL LITERATURE.

——The fifth "Toner Lecture" was by Dr. William W. Keen, on the Surgical Complications and Sequelæ of Continued Fevers. As a resumé of what has been observed on this subject, it is unequaled, and is enriched by a number of original observations. Price 25 cents. Smithsonian Institution, Washington.

——"Veratrum Viride, its Physiological Effects and Therapeutic Uses," is the title of a paper by Dr. J. S. Lynch, reprinted from the Transactions of the Medical and Chirurgical Faculty of Maryland. It is an almost too condensed synopsis of the subject.

——Dr. A. W. Pavy, of London, has recently given to the profession the results of his determinations of sugar in the blood. It forms an interesting physiological study. pp. 15. London, C. W. Reynell.

——The U. S. Pharmacopœia question is reopened by Dr. Squibb, in a rejoinder, including a reprint of the various assaults on him, making a pamphlet of over 150 pages. The writer sustains very ably the position he has assumed, and replies with point, and at the same time with courtesy, to his opponents. The question of copyright is set at rest by legal opinions, and the whole subject fully and fairly stated. Readers are aware that this journal, while not adopting in detail the plan first proposed by Dr. Squibb, very decidedly advocated a change in the method of issuing the Pharmacopœia and Dispensatory, and we are convinced that mature and unbiased reflection will lead the medical profession as a mass, in time, to the same way of thinking.

——The Sanitary Commission of Atlanta, Georgia, have published a volume of Proceedings and Reports, pp. 195. The president of the Commission is Dr. J. P. Logan; the secretary, Dr. V. H. Taliaferro; while Drs. Charles Rauschenberg and W. T. Goldsmith are the other medical members. The volume contains a series of interesting reports, especially one by Dr. Rauschenberg, on Sewerage and Drainage, and one by Dr. Goldsmith, on the Disposal of Refuse.

THE

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OLD AGE AS A PATHOLOGICAL CONDITION.

The problem of the life history of races is one which calls to its solution the profoundest study of the antiquarian, of the geologist, and even of the astronomer. Each species and variety of species does not seem, in the mass, to undergo evolution and development into higher forms of life; this lofty fate is reserved for the select few, while the species as such passes through maturity to decay and extinction.

Applied to man, these reflections have some very direct and practical bearings. There are a number of reasons to believe that organic life has in him reached its zenith and meridian altitude; that henceforward in the life history of this planet, there will be gradual retrogression and a descent to inferior planes of being. It is even advanced, on grounds drawn from diverse sciences, that in the history of man the most brilliant intellectual epochs of his existence are, if not closed, at least almost so. Careful geodesic and astronomical studies fix the period of intellectual life on a planet of this size to a very limited period compared with its past history. Probably, more than half of this period is already gone. Then there are signs of the early failure of many varieties of the race. The fate of the natives of this continent needs no prophet to predict it. The Tasmanians have disappeared, to the last man. The Australians have greatly diminished. The New Zealanders and other Southern Pacific tribes are going with fearful rapidity.

It is claimed that races of greater vitality take their place. But what we call vitality may be deceptive. Modern art has probably added little to bodily vigor. Statistics tell the other way. All it does is to protect age and keep alive the invalids. This is what makes the mortality tables more cheering. There is much reason to believe that the general physical vigor of even the Aryan race is on the decline. One of the evidences for this discouraging conclusion, advanced by a well-known American zoologist, is the relative length of the period of old age in the individual man. In youthful races the individual does not attain old age till very soon (relatively to the entire life) before death. The relative duration of old age grows longer and longer as the race grows older, until, in races which are about to pass away, it becomes nearly equal to half the entire interval between birth and death, soon after which the race dies out.

That men age more rapidly in modern life seems certain; nor is it altogether explained by the competition and extra brain work they encounter.

Can we successfully take up arms against this threatened decrepitude? The case is not hopeless. Perhaps by taking thought we can even get the better of "the abhorred advance of years." Some years ago an American physician wrote a daring article on "the chemical prevention of old age." Defining clearly to himself that all vital processes are none other

than chemical ones, and those which are more particularly concerned in bringing about the physiological conditions of age are calcification and atheroma, he set to work to study whether a certain diet and regimen, assisted by certain remedies of well-known efficacy against these conditions, might not be devised, which would, if not prevent, at least long postpone these changes.

There is nothing absurd, nothing impossible, in the belief that a discovery of great value in this direction should be made. What is needed as a preliminary is a close appreciation of the histology of advanced life, an analysis of how it brings about failure of the powers, and experimental observations, in large numbers, on healthy elderly people.

Notes and Comments.

Pathology of "Broca's Convolution."

An interesting case, bearing on the seat of the faculty of speech, was lately reported to the Pathological Society of Dublin. Dr. Robert McDonnell presented the brain, with a series of illustrative photographs and microscopic sections, of a man aged 64, who became the subject of partial right hemiplegia, with recurrent aphasic attacks, lasting from five to twenty minutes. At last, complete right hemiplegia and sudden aphasia of the most marked kind occurred. In process of time the paralysis was partially recovered from, but the aphasia persisted until death. The only articulate sound the patient could make was "Ti-ti-ti-ti-ti-ti." He could whistle and sing, and was fairly intelligent. The motions of the tongue, larynx and pharynx were perfect; nor was there a trace of facial paralysis. After death the left third frontal convolution could scarcely be distinguished—the only remains of it being *débris*, granular degeneration cells, and connective tissue of the pia mater. The arteries of the brain generally were atheromatous; but the branch of the left Sylvian artery, supplying Broca's convolution, was completely blocked up. The secondary degenerations of the brain, medulla oblongata, and spinal cord were particularly well marked. Thus, transverse sections showed that the longitudinal fibres of the pons varolii were much atrophied on the left side. The left pyramids and olive in the medulla oblongata were similarly affected; but the degeneration of the cord was on the right side, below the decussation of the nerve fibres in the medulla.

Insanity Among Women.

In his last report, Dr. R. S. Parsons, Medical Superintendent of the New York City Lunatic Asylum, calls attention to the rapid increase of insanity among women, as shown by the number of admissions to the institution under his charge. All the patients admitted during the past year—478 in number—were women. Concerning the social position of these patients, farmers' daughters stand numerically highest in the list, amounting to 43, while farmers' wives number 9. This is a curious fact, and a companion one makes it read yet more strangely. Thus, 37 laborers' wives are enumerated, and 19 laborers' daughters. The figures are too decided to allow of any supposition of chance. After the farming and laboring classes, female domestics rate next highest, numbering 26 patients. Out of the 478 admissions 123 were for melancholia and 265 for mania in its various forms. The physical condition of most was good, and 150 were rated as "fair" on the subject of education.

A Contribution to the Theory of Vaginismus.

H. Fritsch, in the *Centralblatt*, June 20th, 1877, relates that a fissure close under the clitoris, five mm. long and one mm. wide, acted as a cause of vaginismus. The subjective symptoms asserted themselves more as a feeling of swelling and injury. With the healing of the fissure the spasm also vanished.

Vaccination Among the Chinese.

Vaccination is greatly appreciated by the Chinese, especially in the southern part of the Empire, and in the southern part of the Island of Formosa. The rule in China has been inoculation; but in the parts we have mentioned vaccination is preferred, and it is so prized that the people are willing to pay for it. Chinese medical students that have been trained by Dr. P. Manson, of Amoy, are frequently called upon to vaccinate Chinese children. Some of these, with others that have had no special training, find it a profitable employment to go round the country, from vil-

lage to village, for the simple purpose of vaccinating. They charge from fifty cents to one dollar, and it is said that some of them gain enough from a few months' practice to support them for the rest of the year.

Effect of Bromide of Potassium.

Echeverria, in his work on Epilepsy, says that in one case the bromide had to be discontinued at night, on account of its inducing lascivious dreams, with seminal emissions, where they never existed before.

Charcoal not a Good Dentifrice.

A correspondent of the *Dental Cosmos* states that charcoal is not a good dentifrice, because the action of the brush will work the particles of charcoal into the gums, and after a while they will have the appearance of being tattooed

Contaminated Water.

Professor Wanklyn thinks that the contagium of the diseases communicable by infected water are of an albuminoid character, and of such definite form, etc., as to be removed by efficient filtration.

CORRESPONDENCE.

Letter from Paris.

PARIS, August 12, 1877.

ED. MED. AND SURG. REPORTER:—

This is the quiet season of Paris; fashionable doctors as well as fashionable patients have gone to the "waters," the mineral springs and the seaside. Preparations are, however, in hand, for a grand opening in the fall. The first great event will take place September 1st. On that day a part of the new Hotel Dieu is to open its doors to the sick. The architect has received orders to finish off, before that date, accommodation for 200 beds, and the 200 invalids who now occupy the old building will then emigrate thence to their new place. Some few have already gone there, but the belief is that it won't be ready to any extent, as, in spite of the time and money wildly wasted on this immense and ill-advised structure, it is far from complete in any part. It was to have been opened on the same day as the new Opera House, and by the late Emperor in person. *L'homme propose mais Dieu dispose.*

Another immense structure is the new School of Pharmacy. It is building in the Luxembourg Garden, and will occupy an extent of 17,000 square metres, a superficies about the same as half the Place de la Concorde. The principal buildings will be faced by a grand court, fifty-seven metres long, in which will stand the statues of Parmentier and Vauquelin. The lecture-room will afford accommodation for 600 students, who will be provided with laboratories in a building 80 metres in length, which is to face the Luxembourg. The whole building will rest upon the catacombs, and it is not expected that it can be completed sooner than 1880.

Army medical matters are attracting attention just now, apropos of the general uneasiness in European military circles. A new law was passed last month. The small stationary military hospitals are to be abandoned, only one to each corps d'armée being allowed. Except in this head-quarter corps hospital, the permanent military hospitals of Paris and Lyons, and the hot baths, the sick of the army will be treated in special wards in the civil hospitals, in charge of military surgeons when the effective of a garrison numbers 1000 men, should the military medical *personnel* permit. In case of insufficiency in this respect the military wards would be in charge of civil surgeons.

In view of the great exhibition next year at Paris, the Society of State Medicine and Hygiene is arranging for an International Congress of Hygiene here in 1878, somewhat like that of Brussels last year. I hope the United States will be represented more fully than it is likely to be in Geneva this year, at the International Medical Congress. Not a single name from our country appears on the programme!

Trephining is coming into fashion with the French surgeons. M. Broca has read a paper to show that it was practiced fearlessly on infants and adults as far back as the stone age. Dr. Bonnafont, well known as an aurist, trephined the tympanum a year ago in a young girl of twenty, who was suffering from deafness which nothing could remove. She could hear the ticking of a watch when applied to the skull. The tympanum was perforated by means of a special trocar, and an accompanying canula, provided with small wings, which could be pushed out *ad libitum*, was left in the tympanum. Restoration of hearing took place instantly, and recovery promptly ensued.

Professor Sée, the distinguished anatomist and surgeon has lately given some of his very favorable experience with salicylate of soda. He declares its effects to be really wonderful in acute and chronic rheumatism, gout, and neuralgia. In twenty-four hours it removed pain, in two or three days the fever and other symptoms. He did not consider it useful or efficacious as an antipyretic, but thought it was highly valuable through its various properties. He gave it in doses of from two to two and a half drachms in a solution, to be taken in the twenty-four hours in doses of one tablespoonful at a time, and he strongly recommended the continuance of the remedy, in gradually decreasing doses, for several days after the disappearance of pain and fever. His colleagues do not esteem it so highly, and perhaps the Professor is an enthusiast? Yours, A. F. K.

News and Miscellany.

The British Medical Association.

This Association met this year, at Manchester, August 7th, for its forty-fifth annual meeting. The President's address was read by Dr. M. A. Eason Wilkinson; the address in medicine by Dr. William Roberts, and that in surgery by Mr. E. Spencer Wells.

A lively discussion as to the management of the journal of the Association (the *British Medical Journal*) took place, resulting in an overwhelming vote in favor of its continuance under its present very competent editor, Mr. Ernest Hart. The report of the Council was presented, together with the usual reports, and the routine work gone through with.

The life of the meeting was in the Sections. A number of valuable papers were read, synopses of which will be given hereafter.

Toward the close of the meeting the chairman announced that a letter, signed by Mr. E Seguin, Chairman of the American Delegation in Manchester, had been received by himself. It expressed thanks to him and to the Association for the brotherly reception accorded to the representatives of the medical profession of the United States. The delegation hope that by the proposed introduction of more uniformity into the practice of physic the high standard of the English physicians would be more universally acknowledged, and they offered the heartiest encouragement to those who labored with the Charity Organization Society, London, for the legal recognition and medical treatment of all idiots and feeble-minded children as wards of this generous and mighty nation.

Items.

—Rebecca Taylor, who was employed as a nurse in the Massachusetts General Hospital from 1826 to 1860, died in Boston a few days ago, at the age of eighty-six. Her pay was continued from her retirement to her death.

—Professor Von Holtzendorff, the distinguished German jurist and lecturer at the University of Munich, is one of the most earnest opponents of capital punishment in the world, and argues and writes against it at every opportunity.

—Dr. W. F. Cooper, living near Charleston, West Virginia, was arrested in Cincinnati, August 24th, for poisoning his third wife. Both the former wives died suddenly, under what were considered suspicious circumstances, and it is now supposed he poisoned them also. The bodies will be exhumed, and examined for traces of poison.

—Dr. A. U. Leinbach, one of the leading physicians of Bethlehem, died last week, of neuralgia of the heart. He was a native of Salem, N. C., but since the war, by which he lost a large estate, was a resident of that town. He was a man of great ability, and largely devoted to science.

Personal.

Dr. C. C. Vanderbeck has been chosen one of the Surgeons of the Eye and Ear Dispensary, Thirteenth and Chestnut, in place of Dr. Reed, resigned, having charge of one of the ear departments.

QUERIES AND REPLIES.

Dr. K., of New York.—Dr. Ehrenstein has not published any further reports on the treatment of ovarian cysts, that we have seen.

Dr. J. M. J.—The most satisfactory treatment for the effects of early self-abuse we have tried is by the repeated introduction of steel bougies, combined with tonics, good diet, and strict sexual hygiene.

Dr. S. A., of Pa.—Prosper Lucas, Charles Darwin, Francis Galton, Alfred Huth, are recent writers on Heredity.

OBITUARY.

Dr. Joseph Worster,

An eminent practicing physician and surgeon of New York city, died of pneumonia, after an illness of ten days, on August 8th.

Dr. Worster had been a practicing physician in New York for nearly fifty years, and was at the time of his death about seventy-five years of age. He was a man of rare attainments, both as a physician and scientist, and he devoted his leisure, even in his later years, to scientific studies, with all the zeal and energy of a young man. His knowledge was notably comprehensive in all branches of science, and in the matter of geology, the investigation of which formed his best loved pastime, he was regarded as an authority. He enjoyed an extensive practice among the wealthy and cultured, and he wrote frequently for medical journals. He was a prominent Free Mason, of high standing in his lodge. He was a practical philanthropist, and was noted for the extent of his charities and his wisdom in dispensing aid where it was needed.

MARRIAGES.

Ott—Field.—On the 30th of April last, by Rev. Dr. Edgar, Dr. Isaac Ott, Physician to the University of Pennsylvania, and Miss Emma D. F. Field, eldest daughter of Dr. Field, all of Easton, Pa.

Post—Milford.—On Monday, July 23d, by Rev. Dr. George H. Houghton, Mary H., daughter of the late Edward Milford, and William E. H. Post, M.D., all of New York city.

DEATHS.

Hawthorne.—At Whitestone, Long Island, July 21st, 1877, Elizabeth A. Bayard, wife of J. N. M. Hawthorne, and daughter of Isabella and the late William Bayard, M. D., of West Farms, New York.

Hobensack.—On the 6th ultimo, Dr. J. N. Hobensack, of Philadelphia, in the 57th year of his age.

Jessup.—In Covington, Kentucky, on the 1st ultimo, Dr. D. H. Jessup, aged 54 years.

Knight.—On the 20th ultimo, George R. Knight, M. D., son of Owen and Phœbe Knight, of Philadelphia, aged 29 years.

Muhlenberg.—At Lancaster, Pa., on the morning of the 25th ult., Dr. H. E. Muhlenberg.

Post.—In New York city, on Monday, July 23d, William E. H. Post, M. D., in the 30th year of his age.

Turnbull.—At East Orange, New Jersey, on Saturday, 11th ultimo, John W. Turnbull, M. D., eldest son of James and Mary W. Turnbull, deceased, of this city, in the 61st year of his age.

Worster.—At his late residence, in New York city, Joseph Worster, M. D., in his 75th year.